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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,292	04/05/2006	Heikki Laamanen	0609US-Laamanen	7003

23521 7590 11/25/2008
SALTAMAR INNOVATIONS
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EXAMINER	
DECKER, CASSANDRA L	
ART UNIT	**PAPER NUMBER**
2419	
MAIL DATE	**DELIVERY MODE**
11/25/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	**Application No.** 10/595,292	**Applicant(s)** LAAMANEN ET AL.	
	Examiner CASSANDRA DECKER	**Art Unit** 2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 September 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *5-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

Detailed Action

Claim Rejections – 35 USC 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 5-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimbrough (US 2002/0063924) in view of Natra (EP 1009156).

For Claim 5, Kimbrough teaches a method for establishing subscriber connections between a central site and a plurality of subscriber premises in a digital hybrid subscriber network, the method comprising:

- coupling a subscriber interface to an optical network by at least one optical fiber to the central site (see Figure 1: optic fiber 44 connects the subscriber interface (items 46 and 50) to the central office);
- coupling the at least one optical fiber to a passive optical element in the subscriber interface to an optical network (see Figure 1: optic fiber 44 is coupled to the passive optical element (item 46) of the subscriber interface (items 46 and 50));
- coupling a plurality of subscriber transmission devices to the subscriber interface to an optical network via a corresponding plurality of subscriber-specific electrically conductive transmission lines (see Figure 1 items 46, 50, 52, and 60, 58, and 56);
- coupling each subscriber-specific electrically conductive transmission line to a corresponding one of subscriber-specific conversion elements in the subscriber interface to an optical network (See paragraph 62); and

- coupling each of the conversion elements optically to the passive optical element (see Figure 1 items 48 and 46);

wherein each of the conversion elements is constructed to:

(a) produce a subscriber-specific electric signal from downstream signals received from the passive optical element and to feed the subscriber-specific electric signal to the corresponding electrically conductive transmission line (see paragraph 62 and Figure 1 item 52);

(b) convert a subscriber-specific upstream signal received from the corresponding electrically conductive transmission line to an upstream optical signal and to feed the upstream optical signal to the passive optical element (see paragraph 62);

(c) operate independently of other conversion elements in the subscriber interface to an optical network (see Figure 1 items 50); and

wherein the passive optical element is constructed to:

(a) receive the downstream signals from the at least one optical fiber and distribute the downstream signals to the conversion elements (see paragraph 57); and

(b) combine the upstream optical signals received from the conversion elements onto the at least one optical fiber (see paragraph 57).

Kimbrough does not teach each conversion element (d) receiving operating power of that conversion element through the corresponding electrically conductive transmission line. However, Natra teaches each conversion element (d) receiving operating power of that conversion element through the corresponding electrically

conductive transmission line (see Abstract, Figure 1 items 35, 31A, and 5a, and paragraph 12).

Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to supply power to the subscriber interface to an optical network of Kimbrough using the method of Natra. The motivation for doing so would be to provide means of powering the subscriber interface to an optical network, identified as a problem by Kimbrough (see paragraph 9), in a manner which allows the extension of the network (see Natra, paragraph 15) with a structure advantageous to fiber optic-based telephone networks (see Natra, paragraph 12).

Kimbrough does not teach an RDSLAM. However, it would have been obvious to a person of ordinary skill in the art at the time of invention to locate one or more home network units (HNUs) in combination with the outside plant (OSP) with its passive optical coupler, thereby forming an RDSLAM in a single unit. The motivation for doing so would be to solve the problem of powering the RDSLAM, as identified by Kimbrough (see paragraph 9), in light of the teachings of Natra, which would allow the RDSLAM to be instantiated as a single unit powered by subscriber lines (see Natra: Abstract). The advantage to Natra's solution is obvious: the network can be extended to more subscribers with existing infrastructure (see Natra, paragraph 15) in a manner compatible with fiber optic-based telephone networks (see Natra, paragraph 12).

For Claim 6, Kimbrough teaches a method further comprising the steps of: inserting a power-generating element into at least one of the conversion elements (see

paragraph 68); and constructing the power-generating element to produce operating power for the corresponding conversion element (see paragraph 68).

Kimbrough does not teach electric power received through the corresponding electrically conductive transmission line. However, Natra teaches electric power received through the corresponding transmission line (see Abstract).

Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to supply power to the RDSLAM of Kimbrough using the method of Natra. The motivation for doing so would be to provide means of powering the RDSLAM, identified as a problem by Kimbrough (see paragraph 9), in a manner which allows the extension of the network (see Natra, paragraph 15) with a structure advantageous to fiber optic-based telephone networks (see Natra, paragraph 12).

For Claim 7, Kimbrough does not teach the method further comprising a step of feeding electric power from a subscriber transmission device through the corresponding electrically conductive transmission line to the corresponding conversion element. However, Natra further teaches the method further comprising a step of feeding electric power from a subscriber transmission device through the corresponding electrically conductive transmission line to the corresponding conversion element (see Figure 1, Abstract, and paragraph 12).

Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to supply power to the RDSLAM of Kimbrough using the method of Natra. The motivation for doing so would be to provide means of powering the RDSLAM, identified as a problem by Kimbrough (see paragraph 9), in a manner which allows the

extension of the network (see Natra, paragraph 15) with a structure advantageous to fiber optic-based telephone networks (see Natra, paragraph 12).

For Claim 8, Kimbrough further teaches a method wherein at least one conversion element is constructed to convert the downstream signals from optical form to electric form (see Figure 1 item 52 and paragraph 62); and separate the subscriber-specific electric signal from the converted signals (see Figure 1 item 52 and paragraph 62).

For Claim 9, Kimbrough further teaches a method wherein at least one conversion element is constructed to separate a subscriber-specific signal from the downstream signals (see Figure 1 item 52 and paragraph 62); and convert the separated signal from optical form to electric form, thereby to obtain the subscriber-specific electric signal (see Figure 1 item 52 and paragraph 62).

For Claim 10, Kimbrough teaches a digital hybrid subscriber network (see Figure 1) comprising:

- at least one optical fiber coupled to a central site at its first end (see Figure 1: optic fiber 44 connects to the central office);
- a subscriber interface to an optical network coupled to a second end of the at least one optical fiber, the subscriber interface to an optical network being located at an intermediate site between the central site and a plurality of subscriber transmission devices and the subscriber interface to an optical network being further provided with a passive optical element coupled with the at least one optical fiber, and with a plurality of

subscriber specific conversion elements coupled to the passive optical element (see Figure 1 items 46 and 50, and 48 and 52);

- a plurality of subscriber-specific electrically conductive transmission lines coupled between the plurality of conversion elements and the corresponding plurality of subscriber transmission devices (see Figure 1 items 60, 58, and 56);

- wherein the passive optical element is constructed to:

(a) receive downstream signals from the at least one optical fiber and distribute the downstream signals to the conversion elements fiber (see paragraph 57 and Figure 1 item 46); and (b) combine upstream optical signals received from the conversion elements onto the at least one optical fiber (see paragraph 57 and Figure 1 item 46);

- and wherein each of the conversion elements is constructed to:

(a) produce a subscriber-specific electric signal from the downstream signals received from the passive optical element and to feed the subscriber-specific electric signal to the corresponding electrically conductive transmission line (see paragraph 62 and Figure 1 item 52);

(b) convert a subscriber-specific upstream signal received from the corresponding electrically conductive transmission line to an upstream optical signal and to feed the upstream optical signal to the passive optical element (see paragraph 62 and Figure 1 item 52); and

(c) operate independently of other conversion elements in the subscriber interface to an optical network (see Figure 1 items 50).

Kimbrough does not teach each of the conversion elements (d) receiving operating power of that conversion element through the corresponding electrically conductive transmission line. However, Natra teaches each of the conversion elements (d) receiving operating power of that conversion element through the corresponding electrically conductive transmission line (see Abstract, Figure 1 items 35, 31A, and 5a, and paragraph 12).

Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to supply power to the subscriber interface to an optical network of Kimbrough using the method of Natra. The motivation for doing so would be to provide means of powering the subscriber interface to an optical network, identified as a problem by Kimbrough (see paragraph 9), in a manner which allows the extension of the network (see Natra, paragraph 15) with a structure advantageous to fiber optic-based telephone networks (see Natra, paragraph 12).

Kimbrough does not teach an RDSLAM. However, it would have been obvious to a person of ordinary skill in the art at the time of invention to locate one or more home network units (HNUs) in combination with the outside plant (OSP) with its passive optical coupler, thereby forming an RDSLAM in a single unit. The motivation for doing so would be to solve the problem of powering the RDSLAM, as identified by Kimbrough (see paragraph 9), in light of the teachings of Natra, which would allow the RDSLAM to be instantiated as a single unit powered by subscriber lines (see Natra: Abstract). The advantage to Natra's solution is obvious: the network can be extended to more

subscribers with existing infrastructure (see Natra, paragraph 15) in a manner compatible with fiber optic-based telephone networks (see Natra, paragraph 12).

For Claim 11, Kimbrough teaches a digital hybrid subscriber network wherein at least one of the conversion elements comprises a power-generating element for producing operating power for that corresponding conversion element (see paragraph 68).

Kimbrough does not teach electric power received from the corresponding electrically conductive transmission line. However, Natra teaches electric power received from the corresponding electrically conductive transmission line (see Abstract).

Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to supply power to the RDSLAM of Kimbrough using the method of Natra. The motivation for doing so would be to provide means of powering the RDSLAM, identified as a problem by Kimbrough (see paragraph 9), in a manner which allows the extension of the network (see Natra, paragraph 15) with a structure advantageous to fiber optic-based telephone networks (see Natra, paragraph 12).

For Claim 12, Kimbrough does not teach a digital hybrid subscriber network further comprising a power supply constructed to supply the operating power required by each conversion element through the corresponding electrically conductive transmission line. However, Natra further teaches a digital hybrid subscriber network further comprising a power supply constructed to supply the operating power required by each conversion element through the corresponding electrically conductive transmission line (see abstract, Figure 1, and paragraph 12).

Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to supply power to the RDSLAM of Kimbrough using the method of Natra. The motivation for doing so would be to provide means of powering the RDSLAM, identified as a problem by Kimbrough (see paragraph 9), in a manner which allows the extension of the network (see Natra, paragraph 15) with a structure advantageous to fiber optic-based telephone networks (see Natra, paragraph 12).

For Claim 13, Kimbrough does not teach a digital hybrid subscriber network wherein the power supply comprises current feeding means in each subscriber transmission device, the current feeding means being constructed to feed direct electric current onto the corresponding electrically conductive transmission line. However, Natra further teaches a digital hybrid subscriber network wherein the power supply comprises current feeding means in each subscriber transmission device, the current feeding means being constructed to feed direct electric current onto the corresponding electrically conductive transmission line (see abstract, Figure 1, and paragraph 12).

Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to supply power to the RDSLAM of Kimbrough using the method of Natra. The motivation for doing so would be to provide means of powering the RDSLAM, identified as a problem by Kimbrough (see paragraph 9), in a manner which allows the extension of the network (see Natra, paragraph 15) with a structure advantageous to fiber optic-based telephone networks (see Natra, paragraph 12).

For Claim 14, Kimbrough teaches a subscriber interface to an optical network for a digital hybrid subscriber network (see Figure 1 items 46 and 50, 52, and 60, 58, and 56), the RDSLAM equipment comprising:

- an optical interface for connecting the subscriber interface to an optical network to at least one optical fiber (see Figure 1: optic fiber 44 connects with the optical interface);
- an electric interface for connecting the subscriber interface to an optical network to a plurality of subscriber-specific electrically conductive transmission lines (see Figure 1 items 46 and 50, 52, and 60, 58, 56);
- a passive optical element coupled to the optical interface for receiving and sending optical signals therethrough (see Figure 1 item 46); and
- a plurality of subscriber-specific conversion elements each coupled to a corresponding one of the subscriber-specific electrically conductive transmission lines and to the passive optical element (see Figure 1 items 50),
- wherein the passive optical element is constructed to:

(a) receive the downstream signals from the at least one optical fiber and distribute the downstream signals to the conversion elements (see paragraph 57); and (b) combine the upstream optical signals received from the conversion elements onto the at least one optical fiber (see paragraph 57),

- and wherein each of the conversion elements is constructed to:

(a) produce a subscriber-specific electric signal from the downstream signals received from the passive optical element and to feed the subscriber-specific electric signal to the

corresponding electrically conductive transmission line (see Figure 1 items 52, and 50, 58, and 56; paragraph 62);

(b) convert a subscriber-specific upstream signal received from the corresponding electrically conductive transmission line to an upstream optical signal and to feed the upstream optical signal to the passive optical element (see paragraph 62); and

(c) operate independently of other conversion elements in the subscriber interface to an optical network (see Figure 1 items 50).

Kimbrough does not teach the conversion element (d) receiving operating power of that conversion element through the corresponding electrically conductive transmission line. However, Natra teaches the conversion element (d) receiving operating power of that conversion element through the corresponding electrically conductive transmission line (see Abstract, Figure 1 items 35, 31A, and 5a, and paragraph 12).

Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to supply power to the subscriber interface to an optical network of Kimbrough using the method of Natra. The motivation for doing so would be to provide means of powering the subscriber interface to an optical network, identified as a problem by Kimbrough (see paragraph 9), in a manner which allows the extension of the network (see Natra, paragraph 15) with a structure advantageous to fiber optic-based telephone networks (see Natra, paragraph 12).

Kimbrough does not teach an RDSLAM. However, it would have been obvious to a person of ordinary skill in the art at the time of invention to locate one or more home

network units (HNUs) in combination with the outside plant (OSP) with its passive optical coupler, thereby forming an RDSLAM in a single unit. The motivation for doing so would be to solve the problem of powering the RDSLAM, as identified by Kimbrough (see paragraph 9), in light of the teachings of Natra, which would allow the RDSLAM to be instantiated as a single unit powered by subscriber lines (see Natra: Abstract). The advantage to Natra's solution is obvious: the network can be extended to more subscribers with existing infrastructure (see Natra, paragraph 15) in a manner compatible with fiber optic-based telephone networks (see Natra, paragraph 12).

For Claim 15, Kimbrough teaches an RDSLAM equipment wherein each subscriber-specific conversion element comprises a power-generating element to produce operating power for the corresponding conversion element from the electric power (see Kimbrough: paragraph 68).

Kimbrough does not teach a power-generating element constructed to receive electric power from the corresponding electrically conductive transmission line. However, Natra teaches a power-generating element constructed to receive electric power from the corresponding electrically conductive transmission line (see Abstract, paragraph 12).

Thus it would have been obvious to a person of ordinary skill in the art at the time of invention to supply power to the RDSLAM of Kimbrough using the method of Natra. The motivation for doing so would be to provide means of powering the RDSLAM, identified as a problem by Kimbrough (see paragraph 9), in a manner which allows the

extension of the network (see Natra, paragraph 15) with a structure advantageous to fiber optic-based telephone networks (see Natra, paragraph 12).

For Claim 16, Kimbrough teaches an RDSLAM equipment wherein the optical signals are in digital form and the subscriber-specific electric signal is in analog form (see paragraphs 62, 64, 65).

For Claim 17, Kimbrough teaches an RDSLAM equipment wherein the subscriber-specific electric signal is in analog form (see paragraphs 62, 64, 65). Kimbrough does not teach the optical signals being in analog form. However, optical signals in analog form are well known in the art.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use analog optical signals, where the claimed differences involve the substitution of interchangeable or replaceable equivalents and were made on for the selection of one equivalent for another was not to solve an existent problem, such substitution has been judicially determined to have been obvious. *In re Ruff, 118, USPQ, 343 (CCPA 1958)*. This supporting is based on a recognition that the claimed difference exists not a as result of an attempt by applicant to solve a problem, but merely amounts to selection of expedients known to the artisan of ordinary skill as design choices.

Response to arguments

Claims 5-17 are pending in the instant application. Claims 1-4 have been cancelled. Claims 5-7 and 10-16 have been amended. The amendments are accepted.

The objections to Claims 6, 12, and 13 are withdrawn in view of the amendments to those claims.

The rejections of Claims 5, 10, and 14 under 35 USC 112, second paragraph, are withdrawn in view of the amendments to those claims.

Applicant's arguments filed 26 September 2008, regarding the rejections to Claims 5-17 under 35 USC 103(a) over Kimbrough (US 2002/0063924) in view of Natra (EP 1009156), have been fully considered but they are not persuasive.

3. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

4. In this case, although Kimbrough is directed to a Fiber to the Home system, Kimbrough does identify a problem with Fiber to the Curb systems which is relevant to the instant application: the problem of powering the RDSLAM (see paragraph 9). Kimbrough goes on to teach a different solution to the problem, separating the RDSLAM into a passive Optical Network Unit to be located remotely and multiple Home Network Units to be located within multiple subscriber premises, with power provided at the premises. However, Natra teaches a solution, which in combination with the system of Kimbrough, allows the RDSLAM to remain a single unit powered by subscriber lines

(see Abstract). The advantage to Natra's solution is obvious: the network can be extended to more subscribers with existing infrastructure (see Natra, paragraph 15) in a manner compatible with fiber optic-based telephone networks (see Natra, paragraph 12). Moreover, the single unit RDSLAM provided with the solution of Natra allows for maintenance of multiple subscriber interfaces at a single location, rather than requiring technicians to visit individual homes.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Blanc (US 7259474) teaches a method for aggregating power from multiple sources, which effectively allows for subscriber line power of a RDLSAM (see column 1 lines 39-55 and column 2 lines 22-47).

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CASSANDRA DECKER whose telephone number is (571)270-3946. The examiner can normally be reached on Monday through Friday, 7:30 am to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel J. Ryman can be reached on (571) 272-3152. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cassandra Decker/
Examiner, Art Unit 2419
11/18/2008

/Daniel J. Ryman/
Supervisory Patent Examiner, Art Unit 2419